

Appln No. 09/423,401
Amdt date May 1, 2006
Reply to Office action of January 30, 2006

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claims 1-22 (canceled)

23. (Currently amended): A method of post-growth tuning of an optical bandgap of a semiconductor heterostructure comprising:

forming an oxide layer on the top-surface of said heterostructure;
depositing at least one metallic interlayer on at least one region of said oxide layer; and
depositing a post-annealing said dielectric layer onto said heterostructure; and
post-annealing said heterostructure.

Claim 24 (Original): A method according to claim 23 wherein said oxide layer is formed by

heating said heterostructure in the presence of pure oxygen;
heating said heterostructure in the presence of oxygen and at least one inert gas;
heating said heterostructure in the presence of water-saturated pure oxygen;
heating said heterostructure in the presence of water-saturated oxygen and inert gas;
heating said heterostructure in the presence of H₂O₂-saturated pure oxygen;
heating said heterostructure in the presence of H₂O₂-saturated oxygen and inert gas; or
heating said heterostructure in the presence of H₂O₂-saturated inert gas.

25. (Currently amended): A method of post-growth tuning of an optical bandgap of a semiconductor heterostructure comprising:

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- a) forming an oxide layer on the top-surface of said heterostructure;
- b) masking said heterostructure with a mask of a predetermined pattern such that said heterostructure is exposed in unmasked regions;
- c) depositing at least one metallic interlayer on said unmasked regions;
- d) lifting-off said mask;
- e) depositing a ~~post-annealing~~ said dielectric layer onto said heterostructure; and
- f) post-annealing said heterostructure.

26. (Original): A method according to claim 25 wherein steps (c) and (d) are repeated to produce additional interlayers according to additional specific patterns.